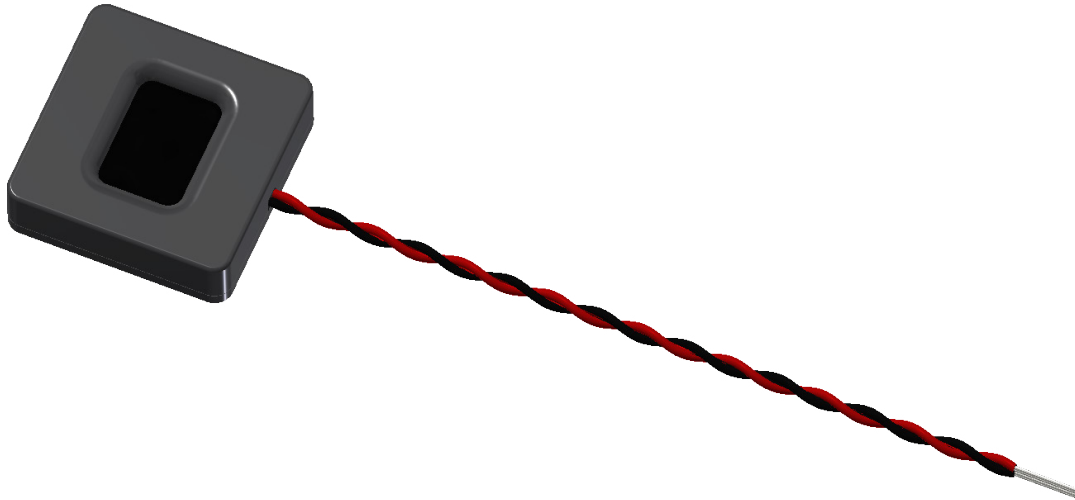


PUI Audio

Meeting Tomorrow's Audio Needs Today



PUI Audio's ASE02506MS-LW90-DSM-R speaker, designed for use with Maxim's DSM technology, delivers clean, clear, consistent sound in a super-thin package.

PUI Audio, located in Dayton, Ohio, and founded in 1978, is North America's largest provider of audio components. The company's industry-leading sales and engineering support is matched with unparalleled new product innovation. Partnering with its customers, PUI Audio meets the specialized sound solutions needs of a variety of technically demanding applications.

Challenge

- Enable customers to deliver louder, richer sound from smaller speakers; simplify the speaker characterization process

Solution

- **MAX98390**

Benefits

- Deliver sound quality and battery life that wasn't previously possible from small speakers; simplified and faster design process, saving up to \$20K and a year of time traditionally required for speaker characterization

The company serves the medical, industrial, security, and consumer markets, delivering audio components such as electro-mechanical and piezo-ceramic transducers, self-drive indicators (also referred to as buzzers), speakers, microphones, and exciters. Many customers lean on PUI Audio's expertise to optimize performance through component placement, speaker enclosure and mechanical product design, as well as final product characterization by measurement.

Challenges

Demystifying the "black magic" of audio for a customer is hard work, especially when it comes to selecting drive-components and end-components to meet a customer's goal or technical requirement. Not all engineers designing systems with sound have expertise in the audio side of the equation. PUI Audio takes a hands-on approach to clearly define these goals and requirements with its customers, showing them practical approaches to achieve their needs.

Device end-users now expect louder sound from smaller speakers. Selecting and then characterizing speakers for a particular design can cost upwards of \$20,000 in equipment and require up to a year of learning for those without the expertise. This is not ideal in the face of cost and time-to-market pressures. While PUI Audio has been designing speakers for several years, it had not been involved in working with its customers on amplifier selection until Maxim reached out for collaboration with its latest amplifier IC.

CUSTOMER SUCCESS STORY: PUI AUDIO



"PUI Audio is excited for the opportunity to partner with Maxim in offering a turnkey solution designed to afford customers the ability to simply and effectively incorporate truly next-level sound."

- Brian Coleman, Vice President of Sales, PUI Audio

"Having the MAX98390 in my toolbox to increase the ability of our micro speakers makes my job easier and our customers much happier—which is the ultimate goal."

- Michael Van Den Broek, Senior Applications Engineer, PUI Audio



Solution and Benefits

To help their customers extract the maximum performance possible from PUI Audio's speakers, the company now has in its toolbox Maxim's **MAX98390** IV-sense amplifier with integrated Dynamic Speaker Management (DSM) technology. DSM technology enables the amplifier to safely drive much higher power levels (up to 5W) into micro speakers rated for lower power. As a result, engineers can deliver louder, clearer, and richer sound from micro speakers designed into compact electronic products.

Said Brian Coleman, the company's vice president of sales: "Maxim has a remarkable reputation in the industry for developing great products, and the MAX98390 is a testament to that. PUI Audio is excited for the opportunity to partner with Maxim in offering a turnkey solution designed to afford customers the ability to simply and effectively incorporate truly next-level sound."

The company has found that the unique ability of this amplifier to extend frequency response, increase overall sound pressure level (SPL), and save battery life (while protecting the speaker) is exactly what its customers need. Until now, having a small speaker perform like a larger one has not been possible. Previously, when engineers wanted to get more out of a speaker or an amplifier, they'd have to tweak sound files and make adjustments that they weren't necessarily accustomed to doing. Now, PUI Audio's customers can prioritize parameters like performance and battery life to best suit their product requirements.

"Meeting customers' audio expectations given available size and power constraints gets tougher each day," noted Michael Van Den Broek, senior applications engineer at PUI Audio. "Having the MAX98390 in my toolbox to increase the ability of our micro speakers makes my job easier and our customers much happier—which is the ultimate goal. It's been very exciting to imagine the possibilities of the next-level sound that we can offer our customers with (Maxim's) chip and our speakers."

[Learn more at www.maximintegrated.com](http://www.maximintegrated.com)